WOODLEY
EQUIPMENT COMPANY LTD.

InSight V-IA®

InSight V-IA Equine Insulin Evaluation vs. Roche

Old Station Park Buildings, St Johns Street, Horwich, BL6 7NY
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The InSight V-IA is an easy to use Veterinary Immunoassay Analyser providing accurate and reliable results in 3-15 minutes. The InSight V-IA uses immunofluorescence technology for accurate results. A competitive binding assay is based upon the competition of labelled and unlabelled analytes for a limited number of antibody binding sites. Unbound antibodies and immunocomplexes migrate along the nitrocellulose membrane towards the test line. The unbound antibodies are then captured by antigens immobilised on the test line. The fluorescent signal intensity reflects the amount of analytes captured and is measured by the InSight V-IA.

Equine Insulin (eINS)

Insulin dysregulation (ID) is the main characteristic of equine metabolic syndrome (EMS). It is a complex disease recognised in horses, characterised by increased local or systemic fat accumulation, abnormal insulin regulation, and susceptibility to laminitis. It mainly occurs in horses aged 5 to 16 years, without a recognised gender preference. It is most common in ponies, riding horses, Tennessee walking horses, Paso Fino horses, Morgan horses and wild horses.

The laboratory diagnosis of equine metabolic syndrome (EMS) is based on the quantitative analysis of insulin levels in the serum or EDTA plasma samples of horses, which is crucial for assessing the horse's blood sugar and insulin homeostasis disorders. An insulin concentration of >20 mIU/L indicates Insulin dysregulation (ID), and horses with EMS, in addition to their ability to handle oral carbohydrate loads, are normal in other aspects and undergo dynamic tests such as oral glucose tolerance test (OST) or oral glucose challenge test (OGT) upon oral administration of glucose.

Comparison Items

InSight V-IA:
Test Item – Equine Insulin
Sample Type – Serum
Quantity of Samples – 25 Tests
Instrument – InSight V-IA Veterinary Immunoassay Analyser
Lot: H001260104/H001251103/H001250501

Roche:
Test Item – Insulin
Sample Type – Serum
Quantity of Samples – 25 Tests

Results

Sample No.	InSight V-IA (mIU/L) Lot: H001260104	Roche (mIU/L)
1	5.64	4.09
2	15.61	17.11
3	18.79	15.53
4	5.12	5.30
5	4.48	6.19
6	207.46	229.07
7	179.25	162.24
8	114.60	126.86
9	92.05	99.70
10	53.32	51.29

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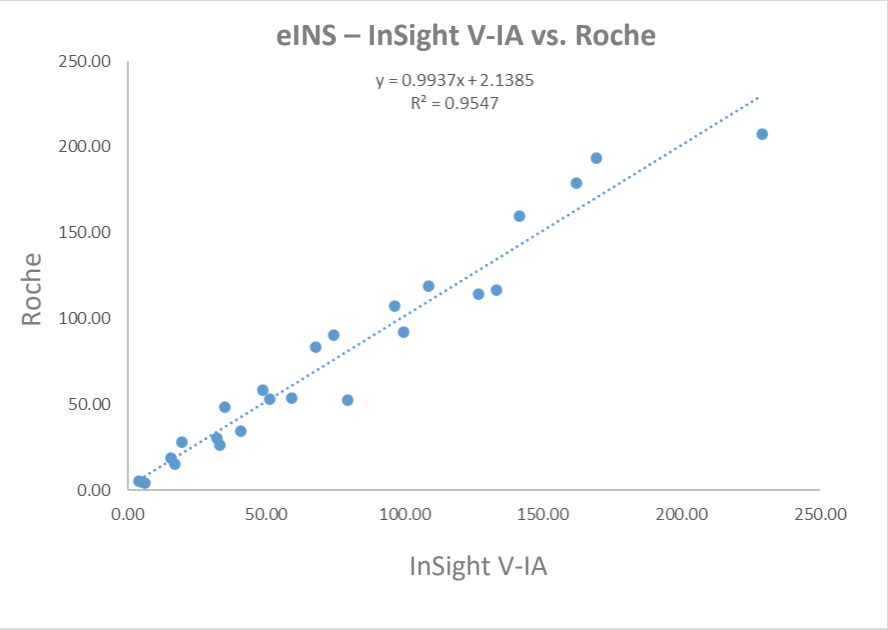
11	90.35	74.47
12	52.75	79.51
13	28.35	19.69
14	34.39	40.74
15	26.61	33.16
16	116.62	133.28
17	107.37	96.50
18	48.52	35.05
19	58.36	48.84
20	30.35	32.24
21	83.73	68.11
22	193.55	169.33
23	159.54	141.48
24	54.08	59.39
25	118.79	108.71

INS		**Roche**		
		Positive	Negative	Total
InSight V-IA	Positive	19	0	19
	Negative	1	5	6
	Total	20	5	25

Positive Coincidence Rate	95%
Negative Coincidence Rate	100%
Total Coincidence Rate	96%



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Repeatability and Lot-to-Lot Variation Study

Quality Control Concentration	Lot: H001260104										Average Value	CV
	1	2	3	4	5	6	7	8	9	10		
280 mIU/L	249.49	278.83	297.02	238.41	260.07	248.97	250.98	272.77	269.41	281.71	264.77	6.90%
140 mIU/L	120.67	159.48	153.18	151.2	136.05	147.02	132.26	132.12	151.08	149.81	143.29	8.55%
25 mIU/L	26.29	27.72	29.51	29.84	28.49	21.62	26.46	28.1	28.64	27.55	27.42	8.53%

Quality Control Concentration	Lot			CV
	H001260104	H001251103	H001250501	
280 mIU/L	274.77	255.36	293.66	6.97%
140 mIU/L	143.29	132.16	162.54	10.53%
25 mIU/L	27.42	22.38	29.35	13.64%

Conclusion

Based on our comparative analysis, the total agreement rate between InSight V-IA eINS and the Roche INS is 96%. The tests show a strong correlation ($R^2 = 0.9547$). The coefficients of variation (CV) for repeatability are less than 10%, while the lot-to-lot variation is less than 15%. This data indicates that the InSight V-IA reagent is comparable to the Roche quantitative reagent.

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